

What is claimed is:

1           1.       A system for diagnosing and monitoring respiratory insufficiency  
2 for automated remote patient care, comprising:

3               a database storing a plurality of monitoring sets which each comprise  
4 recorded measures relating to patient information recorded on a substantially  
5 continuous basis;

6               a server retrieving and processing a plurality of the monitoring sets,  
7 comprising:

8                       a comparison module determining a patient status change by  
9 comparing at least one recorded measure from each of the monitoring sets to at  
10 least one other recorded measure with both recorded measures relating to a same  
11 type of patient information; and

12                      an analysis module testing each patient status change against an  
13 indicator threshold corresponding to the same type of patient information as the  
14 recorded measures which were compared, the indicator threshold corresponding  
15 to a quantifiable physiological measure of a pathophysiology indicative of  
16 respiratory insufficiency.

1           2.       A system according to Claim 1, further comprising:

2               the analysis module managing the respiratory insufficiency and outcomes  
3 thereof through administration of at least one of antibiotic and antiviral therapies,  
4 bronchodilator therapies, oxygen therapies, anti inflammation therapies, electrical  
5 therapies, and mechanical therapies.

1           3.       A system according to Claim 1, further comprising:

2               a database module periodically receiving a monitoring set for an  
3 individual patient, each recorded measure in the monitoring set having been  
4 recorded by at least one of a medical device adapted to be implanted in an  
5 individual patient and an external medical device proximal to the individual  
6 patient when the device measures are recorded and storing the received

7 monitoring set in the database as part of a patient care record for the individual  
8 patient.

1           4.       A system according to Claim 3, further comprising:  
2           a set of further indicator thresholds, each indicator threshold  
3 corresponding to a quantifiable physiological measure used to detect a  
4 pathophysiology indicative of diseases other than respiratory insufficiency;  
5           the comparison module comparing each patient status change to each such  
6 further indicator threshold corresponding to the same type of patient information  
7 as the at least one recorded measure and the at least one other recorded measure;  
8 and  
9           the analysis module testing each patient status change against each such  
10 further indicator threshold corresponding to the same type of patient information  
11 as the recorded measures which were compared.

1           5.       A system according to Claim 1, further comprising:  
2           the comparison determining a change in patient status by comparing at  
3 least one recorded quality of life measure to at least one other corresponding  
4 recorded quality of life measure.

1           6.       A system according to Claim 1, further comprising:  
2           a set of stickiness indicators for each type of patient information, each  
3 stickiness indicator corresponding to a temporal limit related to a program of  
4 patient diagnosis or treatment;  
5           the comparison module comparing a time span occurring between each  
6 patient status change for each recorded measure to the stickiness indicator relating  
7 to the same type of patient information as the recorded measure being compared;  
8 and  
9           the analysis module determining a revised program of patient diagnosis or  
10 treatment responsive to each patient status change occurring subsequent to a time  
11 span exceeding the stickiness indicator.

1           7.       A system according to Claim 1, further comprising:

2 a database module retrieving the plurality of monitoring sets from one of a  
3 patient care record for an individual patient, a peer group, and a overall patient  
4 population.

1 8. A system according to Claim 1, further comprising:  
2 the database further storing a reference baseline comprising recorded  
3 measures which each relate to patient information recorded during an initial time  
4 period and comprise either medical device measures or derived measures  
5 calculable therefrom; and  
6 a database module obtaining at least one of the at least one recorded  
7 measure and the at least one other recorded measure from the retrieved reference  
8 baseline.

1 9. A system according to Claim 1, wherein the indicator thresholds  
2 relate to at least one of a finding of reduced exercise capacity and respiratory  
3 distress.

1 10. A system according to Claim 9, wherein the indicator thresholds  
2 relating to the finding of reduced exercise capacity are selected from the group  
3 comprising decreased cardiac output, decreased mixed venous oxygen score,  
4 decreased patient activity score and decreased exercise tolerance.

1 11. A system according to Claim 9, wherein the indicator thresholds  
2 relating to the finding of respiratory distress are selected from the group  
3 comprising a spike in patient activity score, a spike in pulmonary artery pressure,  
4 a spike in right ventricular pressure, a spike in transthoracic impedance, increased  
5 respiratory rate, increased minute ventilation, increased temperature, decreased  
6 QT interval, decreased arterial oxygen and decreased arterial carbon dioxide.

1 12. A method for diagnosing and monitoring respiratory insufficiency 2  
2 for automated remote patient care, comprising:

3 storing a plurality of monitoring sets which each comprise recorded  
4 measures relating to patient information recorded on a substantially continuous  
5 basis in a database;  
6 retrieving a plurality of the monitoring sets from the database;  
7 determining a patient status change by comparing at least one recorded  
8 measure from each of the monitoring sets to at least one other recorded measure  
9 with both recorded measures relating to a same type of patient information; and  
10 testing each patient status change against an indicator threshold  
11 corresponding to the same type of patient information as the recorded measures  
12 which were compared, the indicator threshold corresponding to a quantifiable  
13 physiological measure of a pathophysiology indicative of respiratory  
14 insufficiency.

1 13. A method according to Claim 12, further comprising:  
2 managing the respiratory insufficiency and outcomes thereof through  
3 administration of at least one of antibiotic and antiviral therapies, bronchodilator  
4 therapies, oxygen therapies, anti inflammation therapies, electrical therapies, and  
5 mechanical therapies.

1 14. A method according to Claim 12, further comprising:  
2 periodically receiving a monitoring set for an individual patient, each  
3 recorded measure in the monitoring set having been recorded by at least one of a  
4 medical device adapted to be implanted in an individual patient and an external  
5 medical device proximal to the individual patient when the device measures are  
6 recorded; and  
7 storing the received monitoring set in the database as part of a patient care  
8 record for the individual patient.

1 15. A method according to Claim 14, further comprising:  
2 defining a set of further indicator thresholds, each indicator threshold  
3 corresponding to a quantifiable physiological measure used to detect a  
4 pathophysiology indicative of diseases other than respiratory insufficiency;

5 comparing each patient status change to each such further indicator  
6 threshold corresponding to the same type of patient information as the at least one  
7 recorded measure and the at least one other recorded measure; and  
8 testing each patient status change against each such further indicator  
9 threshold corresponding to the same type of patient information as the recorded  
10 measures which were compared..

1 16. A method according to Claim 12, further comprising:  
2 determining a change in patient status by comparing at least one recorded  
3 quality of life measure to at least one other corresponding recorded quality of life  
4 measure.

1 17. A method according to Claim 12, further comprising:  
2 defining a set of stickiness indicators for each type of patient information,  
3 each stickiness indicator corresponding to a temporal limit related to a program of  
4 patient diagnosis or treatment;  
5 comparing a time span occurring between each patient status change for  
6 each recorded measure to the stickiness indicator relating to the same type of  
7 patient information as the recorded measure being compared; and  
8 determining a revised program of patient diagnosis or treatment  
9 responsive to each patient status change occurring subsequent to a time span  
10 exceeding the stickiness indicator.

1 18. A method according to Claim 12, further comprising:  
2 retrieving the plurality of monitoring sets from one of a patient care record  
3 for an individual patient, a peer group, and a overall patient population.

1 19. A method according to Claim 12, further comprising:  
2 retrieving a reference baseline comprising recorded measures which each  
3 relate to patient information recorded during an initial time period and comprise  
4 either medical device measures or derived measures calculable therefrom; and  
5 obtaining at least one of the at least one recorded measure and the at least  
6 one other recorded measure from the retrieved reference baseline.

1           20.     A method according to Claim 12, wherein the indicator thresholds  
2 relate to at least one of a finding of reduced exercise capacity and respiratory  
3 distress.

1           21.     A method according to Claim 20, wherein the indicator thresholds  
2 relating to the finding of reduced exercise capacity are selected from the group  
3 comprising decreased cardiac output, decreased mixed venous oxygen score,  
4 decreased patient activity score and decreased exercise tolerance.

1           22.     A method according to Claim 20, wherein the indicator thresholds  
2 relating to the finding of respiratory distress are selected from the group  
3 comprising a spike in patient activity score, a spike in pulmonary artery pressure,  
4 a spike in right ventricular pressure, a spike in transthoracic impedance, increased  
5 respiratory rate, increased minute ventilation, increased temperature, decreased  
6 QT interval, decreased arterial oxygen and decreased arterial carbon dioxide.

1           23.     A computer-readable storage medium holding code for diagnosing  
2 and monitoring respiratory insufficiency for automated remote patient care,  
3 comprising:

4           code for storing a plurality of monitoring sets from a database which each  
5 comprise recorded measures relating to patient information recorded on a  
6 substantially continuous basis;

7           code for retrieving a plurality of the monitoring sets from the database;

8           code for determining a patient status change by comparing at least one  
9 recorded measure from each of the monitoring sets to at least one other recorded  
10 measure with both recorded measures relating to a same type of patient  
11 information; and

12          code for testing each patient status change against an indicator threshold  
13 corresponding to the same type of patient information as the recorded measures  
14 which were compared, the indicator threshold corresponding to a quantifiable  
15 physiological measure of a pathophysiology indicative of respiratory  
16 insufficiency.

1           24.     A storage medium according to Claim 23, further comprising:  
2           code for managing the respiratory insufficiency and outcomes thereof  
3 through administration of at least one of antibiotic and antiviral therapies,  
4 bronchodilator therapies, oxygen therapies, anti inflammation therapies, electrical  
5 therapies, and mechanical therapies.

1           25.     A storage medium according to Claim 23, further comprising:  
2           code for periodically receiving a monitoring set for an individual patient,  
3 each recorded measure in the monitoring set having been recorded by at least one  
4 of a medical device adapted to be implanted in an individual patient and an  
5 external medical device proximal to the individual patient when the device  
6 measures are recorded; and  
7           code for storing the received monitoring set in the database as part of a  
8 patient care record for the individual patient.

1           26.     A storage medium according to Claim 25, further comprising:  
2           code for defining a set of further indicator thresholds, each indicator  
3 threshold corresponding to a quantifiable physiological measure used to detect a  
4 pathophysiology indicative of diseases other than respiratory insufficiency;  
5           code for comparing each patient status change to each such further  
6 indicator threshold corresponding to the same type of patient information as the at  
7 least one recorded measure and the at least one other recorded measure; and  
8           code for testing each patient status change against each such further  
9 indicator threshold corresponding to the same type of patient information as the  
10 recorded measures which were compared..

1           27.     A storage medium according to Claim 23, further comprising:  
2           code for determining a change in patient status by comparing at least one  
3 recorded quality of life measure to at least one other corresponding recorded  
4 quality of life measure.

1           28.     A storage medium according to Claim 23, further comprising:

2 code for defining a set of stickiness indicators for each type of patient  
3 information, each stickiness indicator corresponding to a temporal limit related to  
4 a program of patient diagnosis or treatment;  
5 code for comparing a time span occurring between each patient status  
6 change for each recorded measure to the stickiness indicator relating to the same  
7 type of patient information as the recorded measure being compared; and  
8 code for determining a revised program of patient diagnosis or treatment  
9 responsive to each patient status change occurring subsequent to a time span  
10 exceeding the stickiness indicator.

1 29. A storage medium according to Claim 23, further comprising:  
2 code for retrieving the plurality of monitoring sets from one of a patient  
3 care record for an individual patient, a peer group, and a overall patient  
4 population.

1 30. A storage medium according to Claim 23, further comprising:  
2 code for retrieving a reference baseline comprising recorded measures  
3 which each relate to patient information recorded during an initial time period and  
4 comprise either medical device measures or derived measures calculable  
5 therefrom; and  
6 code for obtaining at least one of the at least one recorded measure and the  
7 at least one other recorded measure from the retrieved reference baseline.

1 31. An automated collection and analysis patient care system for  
2 diagnosing and monitoring respiratory insufficiency and outcomes thereof,  
3 comprising:  
4 a database storing patient monitoring information, comprising:  
5 a plurality of monitoring sets, each monitoring set comprising  
6 recorded measures which each relate to patient information and comprise either  
7 medical device measures or derived measures calculable therefrom, the medical  
8 device measures having been recorded on a substantially continuous basis;



9                   a set of stored indicator thresholds, each indicator threshold  
10 corresponding to a quantifiable physiological measure of a pathophysiology  
11 indicative of respiratory insufficiency and relating to a same type of patient  
12 information as at least one of the recorded measures;  
13               a server diagnosing a respiratory insufficiency finding, comprising:  
14                   an analysis module determining a change in patient status by  
15 comparing at least one recorded measure to at least one other recorded measure  
16 with both recorded measures relating to the same type of patient information; and  
17                   a comparison module comparing each patient status change to the  
18 indicator threshold corresponding to the same type of patient information as the  
19 recorded measures which were compared.

1           32.    A system according to Claim 31, wherein the device measures are  
2 recorded by at least one of a medical device adapted to be implanted in an  
3 individual patient and an external medical device proximal to the individual  
4 patient when the device measures are recorded.

1           33.    A system according to Claim 31, wherein each of the monitoring  
2 sets comprises recorded measures relating to patient information solely for the  
3 individual patient, further comprising:  
4               a database module retrieving each monitoring set from a patient care  
5 record for the individual patient and obtaining the at least one recorded measure  
6 and the at least one other recorded measure from the retrieved monitoring sets.

1           34.    A system according to Claim 31, wherein each of the monitoring  
2 sets comprises recorded measures relating to patient information for a peer group  
3 of patients to which the individual patient belongs, further comprising:  
4               a database module retrieving at least one monitoring set from a patient  
5 care record for the individual patient, retrieving at least one other monitoring set  
6 from a patient care record in the same patient peer group, and obtaining the at  
7 least one recorded measure from the at least one monitoring set and the at least  
8 one other recorded measure from the at least one other monitoring set.

1           35.     A system according to Claim 31, wherein each of the monitoring  
2 sets comprises recorded measures relating to patient information for the general  
3 population of patients, further comprising:

4           a database module retrieving at least one monitoring set from a patient  
5 care record for the individual patient, retrieving at least one other monitoring set  
6 from a patient care record in the overall patient population, and obtaining the at  
7 least one recorded measure from the at least one monitoring set and the at least  
8 one other recorded measure from the at least one other monitoring set.

1           36.     A system according to Claim 31, further comprising:

2           the database further storing a reference baseline comprising recorded  
3 measures which each relate to patient information recorded by the medical device  
4 adapted to be implanted during an initial time period and comprise either device  
5 measures recorded by the medical device adapted to be implanted or derived  
6 measures calculable therefrom; and

7           a database module obtaining at least one of the at least one recorded  
8 measure and the at least one other recorded measure from the retrieved reference  
9 baseline.

1           37.     A system according to Claim 36, wherein the reference baseline  
2 comprises recorded measures relating to patient information for one of the  
3 individual patients solely, a peer group of patients to which the individual patient  
4 belongs, and a general population of patients.

1           38.     A system according to Claim 31, wherein the indicator thresholds  
2 relate to reduced exercise capacity selected from the group comprising decreased  
3 cardiac output, decreased mixed venous oxygen score, decreased patient activity  
4 score and decreased exercise tolerance.

1           39.     A system according to Claim 31, wherein the indicator thresholds  
2 relate to respiratory distress selected from the group comprising a spike in patient  
3 activity score, a spike in pulmonary artery pressure, a spike in right ventricular

4 pressure, a spike in transthoracic impedance, increased respiratory rate, increased  
5 minute ventilation, increased temperature, decreased QT interval, decreased  
6 arterial oxygen and decreased arterial carbon dioxide.

1 40. A system according to Claim 31, the comparison module further  
2 comprising:  
3 a module grading the comparisons between each patient status change and  
4 corresponding indicator threshold on a fixed scale based on a degree of deviation  
5 from the indicator threshold; and  
6 the comparison module determining an overall patient status change by  
7 performing a summation over the individual graded comparisons.

1 41. A system according to Claim 31, the comparison module further  
2 comprising:  
3 a module determining probabilistic weightings of the comparisons  
4 between each patient status change and corresponding indicator threshold based  
5 on a statistical deviation and trends via linear fits from the indicator threshold;  
6 and  
7 the comparison module determining an overall patient status change by  
8 performing a summation over the individual graded comparisons.

1 42. A system according to Claim 31, wherein each monitoring set  
2 further comprises quality of life and symptom measures recorded by the  
3 individual patient, the server further comprising:  
4 a quality of life module determining a change in patient status by  
5 comparing at least one recorded quality of life measure to at least one other  
6 corresponding recorded quality of life measure; and  
7 the server incorporating each patient status change in quality of life into  
8 the respiratory insufficiency finding to either refute or support the diagnosis.

1 43. A system according to Claim 31, further comprising:  
2 a set of stored further indicator thresholds, each indicator threshold  
3 corresponding to a quantifiable physiological measure used to detect a

4 pathophysiology indicative of diseases other than respiratory insufficiency of  
5 disease; and  
6 the server diagnosing a finding of a disease other than respiratory  
7 insufficiency, the comparison module further comprising comparing each patient  
8 status change to each such further indicator threshold corresponding to the same  
9 type of patient information as the at least one recorded measure and the at least  
10 one other recorded measure.

1 44. A system according to Claim 31, further comprising:  
2 a set of stickiness indicators, each indicator threshold corresponding to a  
3 temporal limit related to a course of patient care; and  
4 a feedback module comparing a time span between each patient status  
5 change for each recorded measure to the stickiness indicator corresponding to the  
6 same type of patient information as the recorded measure being compared.

1 45. A system according to Claim 31, further comprising:  
2 a feedback module providing automated feedback to the individual patient  
3 when a respiratory insufficiency finding is indicated.

1 46. A system according to Claim 45, further comprising:  
2 the feedback module performing an interactive dialogue between the  
3 individual patient and the patient care system regarding a medical condition of the  
4 individual patient.

1 47. A method for diagnosing and monitoring respiratory insufficiency S  
2 using an automated collection and analysis patient care system, comprising:  
3 storing a plurality of monitoring sets from a database, each monitoring set  
4 comprising recorded measures which each relate to patient information and  
5 comprise either medical device measures or derived measures calculable  
6 therefrom, the medical device measures having been recorded on a substantially  
7 continuous basis;  
8 retrieving a plurality of the monitoring sets from the database;

9           defining a set of indicator thresholds, each indicator threshold  
10       corresponding to a quantifiable physiological measure of a pathophysiology  
11       indicative of respiratory insufficiency and relating to a same type of patient  
12       information as at least one of the recorded measures; and  
13           diagnosing a respiratory insufficiency finding, comprising:  
14               determining a change in patient status by comparing at least one  
15       recorded measure to at least one other recorded measure with both recorded  
16       measures relating to the same type of patient information; and  
17               comparing each patient status change to the indicator threshold  
18       corresponding to the same type of patient information as the recorded measures  
19       which were compared.

1           48.     A method according to Claim 47, wherein the device measures are  
2       recorded by at least one of a medical device adapted to be implanted in an  
3       individual patient and an external medical device proximal to the individual  
4       patient when the device measures are recorded.

1           49.     A method according to Claim 47, wherein each of the monitoring  
2       sets comprises recorded measures relating to patient information solely for the  
3       individual patient, further comprising:  
4               retrieving each monitoring set from a patient care record for the individual  
5       patient; and  
6               obtaining the at least one recorded measure and the at least one other  
7       recorded measure from the retrieved monitoring sets.

1           50.     A method according to Claim 47, wherein each of the monitoring  
2       sets comprises recorded measures relating to patient information for a peer group  
3       of patients to which the individual patient belongs, further comprising:  
4               retrieving at least one monitoring set from a patient care record for the  
5       individual patient;  
6               retrieving at least one other monitoring set from a patient care record in  
7       the same patient peer group; and

8 obtaining the at least one recorded measure from the at least one  
9 monitoring set and the at least one other recorded measure from the at least one  
10 other monitoring set.

1 51. A method according to Claim 47, wherein each of the monitoring  
2 sets comprises recorded measures relating to patient information for the general  
3 population of patients, further comprising:  
4 retrieving at least one monitoring set from a patient care record for the  
5 individual patient;  
6 retrieving at least one other monitoring set from a patient care record in  
7 the overall patient population; and  
8 obtaining the at least one recorded measure from the at least one  
9 monitoring set and the at least one other recorded measure from the at least one  
10 other monitoring set.

1 52. A method according to Claim 47, further comprising:  
2 retrieving a reference baseline comprising recorded measures which each  
3 relate to patient information recorded by the medical device adapted to be  
4 implanted during an initial time period and comprise either device measures  
5 recorded by the medical device adapted to be implanted or derived measures  
6 calculable therefrom; and  
7 obtaining at least one of the at least one recorded measure and the at least  
8 one other recorded measure from the retrieved reference baseline.

1 53. A method according to Claim 52, wherein the reference baseline  
2 comprises recorded measures relating to patient information for one of the  
3 individual patients solely, a peer group of patients to which the individual patient  
4 belongs, and a general population of patients.

1 54. A method according to Claim 47, wherein the indicator thresholds  
2 relate to reduced exercise capacity selected from the group comprising decreased  
3 cardiac output, decreased mixed venous oxygen score, decreased patient activity  
4 score and decreased exercise tolerance.

1           55.     A method according to Claim 47, wherein the indicator thresholds  
2 relate to respiratory distress selected from the group comprising a spike in patient  
3 activity score, a spike in pulmonary artery pressure, a spike in right ventricular  
4 pressure, a spike in transthoracic impedance, increased respiratory rate, increased  
5 minute ventilation, increased temperature, decreased QT interval, decreased  
6 arterial oxygen and decreased arterial carbon dioxide.

1           56.     A method according to Claim 47, the operation of comparing each  
2 patient status change further comprising:  
3           grading the comparisons between each patient status change and  
4 corresponding indicator threshold on a fixed scale based on a degree of deviation  
5 from the indicator threshold; and  
6           determining an overall patient status change by performing a summation  
7 over the individual graded comparisons.

1           57.     A method according to Claim 47, the operation of comparing each  
2 patient status change further comprising:  
3           determining probabilistic weightings of the comparisons between each  
4 patient status change and corresponding indicator threshold based on a statistical  
5 deviation and trends via linear fits from the indicator threshold; and  
6           determining an overall patient status change by performing a summation  
7 over the individual graded comparisons.

1           58.     A method according to Claim 47, wherein each monitoring set  
2 further comprises quality of life and symptom measures recorded by the  
3 individual patient, the operation of diagnosing a respiratory insufficiency finding  
4 further comprising:  
5           determining a change in patient status by comparing at least one recorded  
6 quality of life measure to at least one other corresponding recorded quality of life  
7 measure; and  
8           incorporating each patient status change in quality of life into the  
9 respiratory insufficiency finding to either refute or support the diagnosis.

1           59.     A method according to Claim 47, further comprising:  
2           defining a set of further indicator thresholds, each indicator threshold  
3           corresponding to a quantifiable physiological measure used to detect a  
4           pathophysiology indicative of diseases other than respiratory insufficiency; and  
5           diagnosing a finding of the disease other than respiratory insufficiency,  
6           comprising comparing each patient status change to each such further indicator  
7           threshold corresponding to the same type of patient information as the at least one  
8           recorded measure and the at least one other recorded measure.

1           60.     A method according to Claim 47, further comprising:  
2           defining a set of stickiness indicators, each indicator threshold  
3           corresponding to a temporal limit related to a course of patient care; and  
4           comparing a time span between each patient status change for each  
5           recorded measure to the stickiness indicator corresponding to the same type of  
6           patient information as the recorded measure being compared.

1           61.     A method according to Claim 47, further comprising:  
2           providing automated feedback to the individual patient when a respiratory  
3           insufficiency finding is indicated.

1           62.     A method according to Claim 61, further comprising:  
2           performing an interactive dialogue between the individual patient and the  
3           patient care system regarding a medical condition of the individual patient.

1           63.     A computer-readable storage medium holding code for diagnosing 6  
2           and monitoring respiratory insufficiency using an automated collection and  
3           analysis patient care system, comprising:  
4           code for storing a plurality of monitoring sets from a database, each  
5           monitoring set comprising recorded measures which each relate to patient  
6           information and comprise either medical device measures or derived measures  
7           calculable therefrom, the medical device measures having been recorded on a  
8           substantially continuous basis;



9           code for retrieving a plurality of the monitoring sets from the database;  
10          code for defining a set of indicator thresholds, each indicator threshold  
11          corresponding to a quantifiable physiological measure of a pathophysiology  
12          indicative of respiratory insufficiency and relating to a same type of patient  
13          information as at least one of the recorded measures; and  
14          code for diagnosing a respiratory insufficiency finding, comprising:  
15                  code for determining a change in patient status by comparing at  
16          least one recorded measure to at least one other recorded measure with both  
17          recorded measures relating to the same type of patient information; and  
18                  code for comparing each patient status change to the indicator  
19          threshold corresponding to the same type of patient information as the recorded  
20          measures which were compared.

1           64.     A storage medium according to Claim 63, wherein each of the  
2          monitoring sets comprises recorded measures relating to patient information  
3          solely for the individual patient, further comprising:  
4                  code for retrieving each monitoring set from a patient care record for the  
5          individual patient; and  
6                  code for obtaining the at least one recorded measure and the at least one  
7          other recorded measure from the retrieved monitoring sets.

1           65.     A storage medium according to Claim 63, wherein each of the  
2          monitoring sets comprises recorded measures relating to patient information for a  
3          peer group of patients to which the individual patient belongs, further comprising:  
4                  code for retrieving at least one monitoring set from a patient care record  
5          for the individual patient;  
6                  code for retrieving at least one other monitoring set from a patient care  
7          record in the same patient peer group; and  
8                  code for obtaining the at least one recorded measure from the at least one  
9          monitoring set and the at least one other recorded measure from the at least one  
10         other monitoring set.

1           66.     A storage medium according to Claim 63, wherein each of the  
2 monitoring sets comprises recorded measures relating to patient information for  
3 the general population of patients, further comprising:  
4           code for retrieving at least one monitoring set from a patient care record  
5 for the individual patient;  
6           code for retrieving at least one other monitoring set from a patient care  
7 record in the overall patient population; and  
8           code for obtaining the at least one recorded measure from the at least one  
9 monitoring set and the at least one other recorded measure from the at least one  
10 other monitoring set.

1           67.     A storage medium according to Claim 63, further comprising:  
2           code for retrieving a reference baseline comprising recorded measures  
3 which each relate to patient information recorded by the medical device adapted  
4 to be implanted during an initial time period and comprise either device measures  
5 recorded by the medical device adapted to be implanted or derived measures  
6 calculable therefrom; and  
7           code for obtaining at least one of the at least one recorded measure and the  
8 at least one other recorded measure from the retrieved reference baseline.

1           68.     A storage medium according to Claim 63, the operation of  
2 comparing each patient status change further comprising:  
3           code for grading the comparisons between each patient status change and  
4 corresponding indicator threshold on a fixed scale based on a degree of deviation  
5 from the indicator threshold; and  
6           code for determining an overall patient status change by performing a  
7 summation over the individual graded comparisons.

1           69.     A storage medium according to Claim 63, the operation of  
2 comparing each patient status change further comprising:

3           code for determining probabilistic weightings of the comparisons between  
4 each patient status change and corresponding indicator threshold based on a  
5 statistical deviation and trends via linear fits from the indicator threshold; and  
6           code for determining an overall patient status change by performing a  
7 summation over the individual graded comparisons.

1           70.     A storage medium according to Claim 63, wherein each  
2 monitoring set further comprises quality of life and symptom measures recorded  
3 by the individual patient, the operation of diagnosing a respiratory insufficiency  
4 finding further comprising:  
5           code for determining a change in patient status by comparing at least one  
6 recorded quality of life measure to at least one other corresponding recorded  
7 quality of life measure; and  
8           code for incorporating each patient status change in quality of life into the  
9 respiratory insufficiency finding to either refute or support the diagnosis.

1           71.     A storage medium according to Claim 63, further comprising:  
2           code for defining a set of further indicator thresholds, each indicator  
3 threshold corresponding to a quantifiable physiological measure used to detect a  
4 pathophysiology indicative of diseases other than respiratory insufficiency; and  
5           code for diagnosing a finding of the disease other than respiratory  
6 insufficiency, comprising comparing each patient status change to each such  
7 further indicator threshold corresponding to the same type of patient information  
8 as the at least one recorded measure and the at least one other recorded measure.

1           72.     A storage medium according to Claim 63, further comprising:  
2           code for defining a set of stickiness indicators, each indicator threshold  
3 corresponding to a temporal limit related to a course of patient care; and  
4           code for comparing a time span between each patient status change for  
5 each recorded measure to the stickiness indicator corresponding to the same type  
6 of patient information as the recorded measure being compared.

1           73.     A storage medium according to Claim 63, further comprising:

2 code for providing automated feedback to the individual patient when a  
3 respiratory insufficiency finding is indicated.

1 74. A storage medium according to Claim 73, further comprising:  
2 code for performing an interactive dialogue between the individual patient  
3 and the patient care system regarding a medical condition of the individual  
4 patient.

1 75. An automated patient care system for diagnosing and monitoring 7  
2 respiratory insufficiency, comprising:  
3 a medical device regularly recording measures relating to at least one of  
4 monitoring reduced exercise capacity and respiratory distress;  
5 a database maintaining information for an individual patient, comprising  
6 organizing a plurality of monitoring sets in a database, and storing the recorded  
7 measures for the individual patient on a substantially continuous basis into a  
8 monitoring set in the database;  
9 a server evaluating at least one of respiratory insufficiency onset,  
10 progression, regression, and status quo, comprising:  
11 a comparison module determining a patient status change by  
12 comparing at least one recorded measure from each of the monitoring sets to at  
13 least one other recorded measure with both recorded measures relating to a same  
14 type of patient information; and  
15 an analysis module testing each patient status change against an  
16 indicator threshold corresponding to the same type of patient information as the  
17 recorded measures which were compared, the indicator threshold corresponding  
18 to a quantifiable physiological measure of a pathophysiology indicative of  
19 reduced exercise capacity and respiratory distress.

1 76. A system according to Claim 75, wherein the indicator thresholds  
2 relating to reduced exercise capacity selected from the group comprising  
3 decreased cardiac output, decreased mixed venous oxygen score, decreased  
4 patient activity score and decreased exercise tolerance.

1           77.     A system according to Claim 75, wherein the indicator thresholds  
2 relating to respiratory distress selected from the group comprising a spike in  
3 patient activity score, a spike in pulmonary artery pressure, a spike in right  
4 ventricular pressure, a spike in transthoracic impedance, increased respiratory  
5 rate, increased minute ventilation, increased temperature, decreased QT interval,  
6 decreased arterial oxygen and decreased arterial carbon dioxide.

1           78.     A method for diagnosing and monitoring respiratory insufficiency  
2 in an automated patient care system, comprising:  
3           regularly recording measures relating to at least one of monitoring reduced  
4 exercise capacity and respiratory distress;  
5           maintaining information for an individual patient, comprising:  
6                 organizing a plurality of monitoring sets in a database;  
7                 storing the recorded measures for the individual patient on a  
8 substantially continuous basis into a monitoring set in the database;  
9           periodically retrieving a plurality of the monitoring sets from the database;  
10          evaluating at least one of respiratory insufficiency onset, progression,  
11 regression, and status quo, comprising:  
12                 determining a patient status change by comparing at least one  
13 recorded measure from each of the monitoring sets to at least one other recorded  
14 measure with both recorded measures relating to a same type of patient  
15 information; and  
16                 testing each patient status change against an indicator threshold  
17 corresponding to the same type of patient information as the recorded measures  
18 which were compared, the indicator threshold corresponding to a quantifiable  
19 physiological measure of a pathophysiology indicative of reduced exercise  
20 capacity and respiratory distress.

1           79.     A method according to Claim 78, wherein the indicator thresholds  
2 relating to reduced exercise capacity selected from the group comprising

3 decreased cardiac output, decreased mixed venous oxygen score, decreased  
4 patient activity score and decreased exercise tolerance.

1 80. A method according to Claim 78, wherein the indicator thresholds  
2 relating to respiratory distress selected from the group comprising a spike in  
3 patient activity score, a spike in pulmonary artery pressure, a spike in right  
4 ventricular pressure, a spike in transthoracic impedance, increased respiratory  
5 rate, increased minute ventilation, increased temperature, decreased QT interval,  
6 decreased arterial oxygen and decreased arterial carbon dioxide.

1 81. A computer-readable storage medium holding code for diagnosing  
2 and monitoring respiratory insufficiency in an automated patient care system,  
3 comprising:  
4 code for regularly recording measures relating to at least one of  
5 monitoring reduced exercise capacity and respiratory distress;  
6 code for maintaining information for an individual patient, comprising:  
7 code for organizing a plurality of monitoring sets in a database;  
8 code for storing the recorded measures for the individual patient on  
9 a substantially continuous basis into a monitoring set in the database;  
10 code for periodically retrieving a plurality of the monitoring sets from the  
11 database;  
12 code for evaluating at least one of respiratory insufficiency onset,  
13 progression, regression, and status quo, comprising:  
14 code for determining a patient status change by comparing at least  
15 one recorded measure from each of the monitoring sets to at least one other  
16 recorded measure with both recorded measures relating to a same type of patient  
17 information; and  
18 code for testing each patient status change against an indicator  
19 threshold corresponding to the same type of patient information as the recorded  
20 measures which were compared, the indicator threshold corresponding to a  
21 quantifiable physiological measure of a pathophysiology indicative of reduced  
22 exercise capacity and respiratory distress.